This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An electromagnetic interference analysis method for analyzing the amount of electromagnetic interference arising in an LSI by means of performing a gate level ~~logic~~ simulation, the method comprising:

an instantaneous current amount calculation step of calculating the amount of instantaneous electric current from event information, the information being produced when a change arises in a signal and including the instance name of each cell in which the change has arisen, the name of the signal, a time at which the change has arisen, and transition information;

a ~~modeling~~ transforming step of ~~modeling~~ transforming said instantaneous current amount into an ~~the~~ instantaneous electric current according to a predetermined rule related to said instantaneous current amount; and

an FFT processing step of subjecting to fast Fourier processing (hereinafter referred to as "FFT processing") the information concerning a change in electric current, the information being calculated through the transforming ~~modeling~~ step.

2. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes an averaging step of averaging the instantaneous current over a certain discrete width, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information

being produced by the averaging step.

3. (previously presented) The electromagnetic interference analysis method as defined in claim 1 wherein the modeling step includes a rectangular waveform modeling step of modeling the instantaneous current as a rectangular waveform whose height is calculated from information for each event such that the area of the rectangular waveform becomes equal to the amount of electric current of each event and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the rectangular waveform modeling step.

4. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a geometrically-similar rectangular waveform modeling step of modeling the instantaneous current as a geometrically-similar rectangular waveform whose height and width are calculated such that the area of the rectangular waveform becomes equal to the amount of electric current of each event, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the geometrically-similar rectangular waveform modeling step.

5. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a rectangular waveform modeling step of calculating the instantaneous electric current from each event information, and a step of modeling the instantaneous current as a rectangular waveform through use of the amount of electric current and a table representing the

relationship between the width and height of a rectangular waveform, to thereby subject to FFT processing the information concerning a change in electric current calculated in the rectangular waveform modeling step.

6. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of calculating the instantaneous electric current from information for each event, and a rectangular waveform modeling step of modeling the instantaneous current as a rectangular waveform through use of a slew in input waveform and a table representing the relationship between the width and height of a rectangular waveform, to thereby subject to FFT processing the information concerning a change in electric current calculated in the rectangular waveform modeling step.

7. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of calculating the instantaneous electric current from information for each event, and a rectangular waveform modeling step of modeling the instantaneous current as a rectangular waveform through use of an output load capacitance and a table representing the relationship between the width and height of a rectangular waveform, to thereby subject to FFT processing the information concerning a change in electric current calculated in the rectangular waveform modeling step.

8. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of calculating a drop in voltage from the amount of electric current flowing in each cell and the resistance of a power line and correcting the

amount of instantaneous electric current of each cell for each event, on the basis of the relationship between the drop in voltage and the amount of instantaneous electric current.

9. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of calculating a drop in voltage from the amount of electric current flowing in each cell, the resistance of a power line, and the capacitance of an on-chip capacitor, and correcting the amount of instantaneous electric current of each cell for each event, on the basis of the relationship between the drop in voltage and the amount of instantaneous electric current.

10. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of transiently analyzing a power RC of each cell and a cell power source, accurately calculating a drop in voltage, and a correction step of correcting the amount of instantaneous electric current of each cell for each event, on the basis of the relationship between the drop in voltage and the amount of instantaneous electric current.

11. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a triangular waveform modeling step of modeling the instantaneous current as a triangular waveform which has a given width and whose height is calculated from each event information such that the amount of instantaneous electric current becomes equal to the area of the triangular waveform, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the triangular waveform modeling step.

12. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a multi-order-function waveform modeling step of modeling the instantaneous current as a multi-order function waveform, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the multi-order-function waveform modeling step.

13. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes an exponential function waveform modeling step of modeling the instantaneous current as an exponential-function waveform, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the exponential-function waveform modeling step.

14. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of modeling the amount of instantaneous electric current while separating the same into a short circuit electric current component and a charge current component.

15. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a calculation step of calculating the height of a rectangular waveform from a library in which peak currents of cells are characterized according to the type of cell, and a rectangular waveform modeling step of modeling the amount of instantaneous electric current as a rectangular waveform, the peak current calculated in the calculation step

being taken as the height of the rectangular waveform and the area of the rectangular waveform being equal to the amount of electric current of each event, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the rectangular waveform modeling step.

16. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the calculation step includes a step of calculating a peak current for each cell from information concerning a slew in the cell, by reference to a library in which the relationship between a slew in input waveform and a peak current is characterized in the form of a table according to the type of cell.

17. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the calculation step includes a step of calculating a peak current for each cell from information concerning a load capacitance of a cell, by reference to a library in which the relationship between a load capacitance and a peak current is characterized in the form of a table according to the type of cell.

18. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the calculation step includes a step of setting a plurality of peak currents for a composite cell and calculating the heights of a plurality of rectangular waveforms through use of a characterized library, and the rectangular waveform modeling step corresponds to a step of modeling the amount of electric current into a plurality of rectangular waveforms.

19. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the calculation step

includes a step of setting a plurality of peak currents for each of the rise and fall of a flip-flop (FF) cell and calculating the heights of a plurality of rectangular waveforms through use of a characterized library, and the rectangular waveform modeling step corresponds to a step of modeling the amount of electric current into a plurality of rectangular waveforms.

20. (original) The electromagnetic interference analysis method as defined in claim 15 , wherein the calculation step includes a step of calculating the height of a rectangular waveform through use of a library in which peak currents are characterized, in consideration of the state of an input signal.

21. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the modeling step includes a step of calculating a drop in voltage from the amount of electric current determined according to the type of cell and from the resistance of a power line; and a correction step of characterizing, for each cell, the relationship between a drop in voltage and the amount of instantaneous electric current in the form of a table, to thereby correct the amount of instantaneous electric current for each event of the cell.

22. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the modeling step includes a step of

calculating a drop in voltage from the amount of electric current determined according to the type of cell, the resistance of a power line, and the capacitance of an on-chip capacitor; and

a correction step of characterizing, for each cell, the relationship between a drop in voltage and the amount of instantaneous electric current in the form of a table, to thereby correct the amount of instantaneous electric current for each event of the cell.

23. (original) The electromagnetic interference analysis method as defined in Claim 10, wherein the correction step includes a step of iterating several times calculation of a drop in voltage and correction of a current waveform.

24. (original) The electromagnetic interference analysis method as defined in claim 15, wherein the calculation step includes a step of modeling the amount of instantaneous electric current while separating the same into a short circuit electric current component and a charge current component.

25. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a triangular waveform modeling step of modeling the instantaneous current as a triangular waveform whose width is calculated from each event information in consideration of slew information (i.e., an output slew) for an output terminal of a cell for each event information such that the area of the triangular waveform becomes equal to the amount of electric current of each event, the height of the triangular waveform being calculated on the basis of the width, and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the triangular waveform modeling step.

26. (original) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a triangular height calculation step of calculating the height of a triangular waveform such that the area of the triangular waveform becomes equal to the amount of electric current of each event, by means of multiplying the amount of instantaneous electric current by a coefficient corresponding to the state of an event of a cell, in consideration of whether the event of the cell is in a rising state or a falling state.

27. (previously presented) The electromagnetic interference analysis method as defined in claim 1, wherein the modeling step includes a step of calculating the amount of instantaneous electric current from each event information in the case of a composite cell; and a triangular waveform modeling step of modeling the amount of instantaneous electric current as a plurality of triangular waveforms which are equal in number to the stages provided in the composite cell, through use of a table representing the relationship between the width and height of a triangular waveform; and the FFT processing step includes a step of subjecting to FFT processing information concerning a change in current, the information being calculated in the triangular waveform modeling step.

28. (currently amended) An electromagnetic interference analysis system for analyzing the amount of electromagnetic interference arising in an LSI by means of performing a gate level ~~logic~~ simulation, the system comprising:

a logic simulator;

computation means which is connected to the logic simulator and calculates the amount of instantaneous

electric current from event information, the information being produced when a change arises in a signal and including the instance name of each cell in which the change has arisen, the name of the signal, a time at which the change has arisen, and transition information;

~~modeling~~ transforming means for ~~modeling~~ transforming said instantaneous electric current amount into an ~~the~~ instantaneous electric current according to a predetermined rule related to said instantaneous current amount; and

fast Fourier (FFT) conversion means for subjecting to fast Fourier processing the information concerning a change in electric current, the information being calculated through the ~~modeling~~ transforming means, thereby analyzing the amount of electromagnetic interference arising in an LSI on the basis of a signal output from the FFT conversion means.

29. (previously presented) The method of claim 1, further comprising the step of providing a gate level logic simulation.

30. (currently amended) The ~~method~~ system of claim 28, further comprising a gate level logic simulator.